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(U) AIR COMMAND AND STAFF COLL MAXWELL AFB AL
M R PETERSON APR 86 ACSC-86-2000

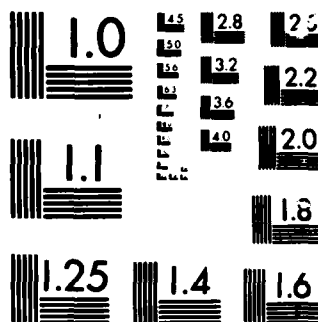
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STUDENT REPORT

JOB ATTITUDES OF USAF
AIRCRAFT MAINTENANCE PERSONNEL

MAJOR MICHAEL R. PETERSON 86-2000
"insights into tomorrow"

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PREFACE

An integral part of the timely and effective use of airpower is a complex maintenance organization and the people who work within it. With this in mind, by understanding the job attitudes of aircraft maintenance personnel it would be possible to increase job output and airpower capabilities. The purpose of this report is to compare and contrast attitudes of USAF Tactical Air Forces (TAF) aircraft maintenance personnel, other major command maintenance personnel, and other Air Force personnel. Further, aircraft maintenance officers, enlisted personnel in the 431XX career field, and civilian personnel in aircraft maintenance are contrasted with personnel in other categories throughout the Air Force. Comparing the attitudes of these various subgroups provides a vehicle for supervisors, leaders, and functional managers to understand their personnel and improve their duty performance.

Appreciation is given to the personnel in the Leadership and Management Development Center (LMDC) for the help in understanding the Organizational Assessment Package (the basis of this study). Also, it should be noted that the format style of this paper is directed by LMDC and is based on the recommended style of the American Psychological Association.

Lastly, I would like to add a special word of appreciation to my wife, Mary, without whose help this paper could not have been completed.



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Major Michael R. Peterson is a personnel officer with varied assignments in six different major commands. He is a graduate of the USAF Academy in 1972 with a Bachelor of Science in Management Engineering. In addition he obtained a Master of Business Administration degree from Oklahoma City University in 1975.

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EXECUTIVE SUMMARY

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REPORT NUMBER 86-2000

AUTHOR(S) MAJOR MICHAEL R. PETERSON, USAF

TITLE JOB ATTITUDES OF USAF AIRCRAFT MAINTENANCE PERSONNEL

I. Purpose: To investigate and compare the job attitudes of USAF Tactical Air Force (TAF) aircraft maintenance personnel, other MAJCOM maintenance personnel, and personnel from all other Air Force career fields.

II. Background: There is a growing awareness in the Air Force that aircraft maintenance is a key ingredient to combat readiness. Because of this it is important that commanders, supervisors and functional managers understand the job attitudes of personnel within the aircraft maintenance career field. By understanding these attitudes it may be possible to increase productivity and job satisfaction with little or no increase in cost.

III. Discussion: The primary objective of this project was to identify significant attitudinal differences between officer, enlisted, and civilian personnel in TAF aircraft maintenance, other MAJCOM aircraft maintenance, and all other career fields. The vehicle to achieve this goal was the USAF Organizational Assessment Package (OAP) which was developed by the Leadership and Management Development Center (LMDC) at Maxwell AFB, Alabama. The OAP survey consists of 16 demographic items and 93 attitudinal items which are grouped to form 21 attitudinal factors. The comparison of these factors between groups identifies relative levels of job satisfaction/dissatisfaction.

CONTINUED

IV. Procedures and Results: In order to attain the objective of this project several steps were taken:

(a) A review of past OAP results and organizational behavior literature was conducted to determine what previous researchers have learned.

(b) Separate comparisons of demographic and attitudinal results of 12,624 officer, 70,547 enlisted, and 24,694 civilian personnel in the TAF, other MAJCOMs and other career fields were conducted. The ANOVA procedure was used to identify overall differences at the 95 percent confidence level. The Newman-Keuls procedure was then used to determine specific statistical differences between groups.

(c) By analyzing results from the present study and those from the literature review, it was possible to identify potential reasons for attitudinal differences.

V. Conclusions: Within the officer and civilian personnel categories, there are few significant differences in job attitudes among the three categories (i.e., TAF maintenance, other maintenance, and other career fields). However, TAF enlisted maintenance personnel have generally more positive job attitudes than other MAJCOM maintenance personnel in the areas of the work itself and job enrichment. Further, these positive attitudes may be a function of the TAF maintenance organization as restructured under the Production Oriented Maintenance Organization (POMO), also referred to as Combat Oriented Maintenance Organization (COMO).

VI. Recommendations: The Air Force should investigate means to incorporate POMO/COMO type of structures in organizations where they would benefit job satisfaction without impairing mission performance. This investigation should not only include other maintenance organizations, but other support functions as well.

Chapter One

INTRODUCTION

If the mission of the Air Force is to fly, fight, and win there can be no mistake as to the importance of maintenance personnel to the mission. To have highly trained, properly equipped, and professionally motivated maintenance personnel is no less important to putting a bomb on a target than having these same qualities present in the pilot of the aircraft. Although the pilot is the final link to accomplishing the mission, there is a growing awareness that combat readiness depends to a large extent on the efficient operation and technical capability of the maintenance organization and the people within that organization (Beilstein, Chenroff, Shipton, & Joyce, 1984).

Because maintenance personnel are crucial to mission success, it is important that commanders, supervisors, and functional managers understand the job attitudes of personnel within the aircraft maintenance career field. Job attitudes have a major effect upon how individual workers or groups of workers perform their responsibilities. According to Steers (1981), attitudes can be found everywhere on the job, they influence individual behavior, and poor attitudes can manifest themselves in poor job performance, turnover, and higher

costs. Once the attitudes of workers are quantified and understood, it becomes possible for supervisors to use their knowledge of workers' attitudes to affect behavior and improve job performance.

The purpose of this paper is to study the job attitudes of personnel in the USAF aircraft maintenance career area. The present research is limited to a study of the attitudes of aircraft maintenance officers, enlisted personnel in the 43XXX career field, and civilian personnel in 40XX/43XXX career area. In order to better understand job attitudes of maintenance personnel, their attitudes are contrasted with other Air Force personnel of the same status (officer, enlisted, and civilian) but in other career areas. Furthermore, because of the unique nature of combat-oriented maintenance within the Tactical Air Forces (TAF), the attitudes of TAF personnel are contrasted with the attitudes of other aircraft maintenance personnel. It is hoped the present study will provide a useful tool to help supervisors and leaders gain a deeper understanding of job attitudes within the maintenance career field.

The primary tool used for this analysis is the Leadership and Management Development Center's (LMDC) Organizational Assessment Package (OAP) Survey. In May 1977, the Leadership and Management Development Center and the Air Force Human Resources Laboratory (AFHRL) combined their skills and talents to develop a survey which could be used to help provide con-

sultant services to Air Force commanders and supervisors (Short, 1985). This survey has been administered over 200,000 times to Air Force personnel and provides an excellent source of data to analyze attitudes of many subpopulations within the Air Force. The OAP Survey consists of 109 items. Attitudinal items are grouped to form 21 attitudinal factors. In addition to these attitudinal items the survey asks a series of background questions about the individual to compile demographic information. The combination of responses to the attitudinal and demographic items allows the manager/supervisor to diagnose work group problems or differences from other groups, and to suggest appropriate corrective actions.

Using OAP data collected by LMDC, this report pursues three main objectives:

1. To review background material, including organizational behavior literature, and determine what previous researchers have learned about work attitudes of aircraft maintenance personnel and other Air Force personnel;

2. To compare demographic and attitudinal results on the OAP for officers, enlisted personnel, and civilians within the aircraft maintenance career field in the TAF, and other MAJCOMs, to demographics and attitudes within other career fields; and

3. To analyze attitudinal differences (strengths and weaknesses) to develop recommendations for aircraft main-

tenance career field supervisors, leaders, and functional managers.

In order to achieve the objectives of the report, a step-by-step problem solving technique is used. The next chapter provides a review of information pertinent to the OAP and organizational behavior. Chapter Three discusses in detail the methodology of study. The OAP survey is reviewed, the data collection process is discussed and the limits of analysis are presented. Chapter Four presents the results, including demographic and attitudinal comparisons for TAF maintenance personnel, other maintenance personnel and personnel in other career fields. Chapter Five is a discussion and analysis of the results. Lastly, Chapter Six contains conclusions and recommendations.

Chapter Two

LITERATURE REVIEW

To do a complete review of the subjects or topics dealt with in this paper would be rather like trying to take a drink of water out of a fire hydrant when the pressure is fully on--a task beyond the scope of this paper. The intent of this chapter, then, is to encapsulate several of the important organizational behavior concepts which permeate work, motivation, and job satisfaction. More specifically this paper reviews the following subject areas: (a) work itself, (b) motivation in an organization and the general motivation process, (c) several theories of motivation and job satisfaction, and (d) the motivation potential score as developed by Hackman and Oldham (1980). Although the scope of this chapter may seem quite broad, this approach is essential to ensure the reader has the proper background on this subject.

According to a Department of Health, Education, and Welfare Report in 1973, work is an activity that produces something of value for other people. This definition, although very general, provides a concept upon which to build. Clearly, work serves several functions--economic, social, status, identity, self-esteem, and self-actualization (Steers, 1981). As might be expected, work is extremely important to individ-

uals (adding meaning to their day-to-day activities), while it is equally important to organizations or states as a basis for creating wealth. Work takes up a great deal of our time and energy and must be meaningful if we want to obtain value from it. It is the responsibility of managers and organizations to properly motivate the workers so they are productive and obtain the proper amount of job satisfaction.

Most managers today believe that if a worker is well motivated and satisfied the organization will benefit (Gray & Starke, 1984). Although often treated simply, motivation is a very complex subject and deserves some attention. According to Williams (1978), motivation is a process in which enthusiasm and persistence are aroused to satisfy a need. All of us have a great many needs in life which must be satisfied to sustain ourselves and we are motivated at various levels to achieve these needs. In the case of work, the functions of work (previously mentioned) become the needs of the individual workers. When these needs are not met, the worker is motivated to meet them. A logical way to look at this process is in four steps: (a) anticipation of a need or desire; (b) behavior or action; (c) receipt of reward or goal; and (d) feedback followed by reassessment of the results (Steers, 1981). This simple definition and model do not take into consideration all influences on motivation, but lay a foundation to understand this complicated subject.

Research into motivation and job satisfaction in the last 50 years has surfaced many new and important concepts, but has also brought about the development of many conflicting and confusing theories. This chapter is limited to a discussion of two of the more widely known theories: Maslow's Hierarchy of Needs and Herzberg's Two-Factor Theory. Once again, although these theories do not represent all the various schools of thought, they are perhaps the best known and are frequently used by managers to explain worker motivation and job satisfaction.

Let us begin with Maslow's Hierarchy of Needs. Abraham Maslow argues that human needs are arranged hierarchically, and that lower or more basic needs must be satisfied before upper level needs can be fulfilled (Gray & Starke, 1984). He further defines the lower level needs of physiological satisfaction, safety, and belongingness as deficiency needs--needs which must be satisfied if a person is to feel healthy and secure. The upper level needs of esteem and self-actualization he considers "growth needs" (Steers, 1981), and these needs relate to the development and achievement of a person's potential. Central to this hierarchy is the assumption that an unsatisfied need becomes a motivator; once a need is satisfied it becomes less a motivator of behavior and the next level need becomes the primary motivator. This theory was very popular with managers because of its simplicity and the fact that it implied easy solutions to increasing job satis-

faction and productivity in the workplace (Steers, 1981).

Frederick Herzberg, in his Two-Factor Theory, thought of job satisfaction not as a one-dimensional concept, but as two dimensional. He no longer looked at people as being simply satisfied or not, but he perceived satisfaction and dissatisfaction to be two separate (though related) factors (Gray & Starke, 1984). He saw job factors such as pay, job security, and working conditions as only having the capability to dissatisfy a worker. He called these Hygiene Factors; they were considered extrinsic to a job. The factors which satisfied workers were found intrinsic to each job, in the content of the job, and were called Motivation Factors. Some examples of these are responsibility, recognition, the work itself and achievement (Williams, 1978). Herzberg felt that the lack of motivation factors would not dissatisfy a worker, but the absence of hygiene factors would. On the other hand, the presence of hygiene factors does not satisfy a worker, only maintains him/her, and motivational factors must be present to provide true satisfaction.

Using these two theories as a basis, managers began to attempt to change the degree of job satisfaction by changing the extrinsic or intrinsic factors of the job. Since there is only so much which can be done with extrinsic factors such as pay, working conditions, and security, managers began to embark on changes which would affect intrinsic factors. These programs such as job enlargement, job rotation, or job puri-

fication were grouped together under the heading of job enrichment programs; some were successful, while others were not (Boren, 1980). Researchers took a second look at the "Two-Factor Theory" and brought forth theories stating simple job enrichment is not enough; people must want their job enriched. A person who is satisfied by the current level of challenge, achievement, and meaningfulness will not be motivated by job enrichment attempts (Boren, 1980).

According to Gray and Starke (1984), a person who has a great deal of current job satisfaction is likely to continue employment, which in turn continues his rewards and some level of job satisfaction. A manager must understand need and motivation in an attempt to increase job satisfaction.

Concerned with the failure of many job enrichment efforts, Hackman and Oldham (1980) built on the motivation theories and identified three psychological states which affected internal work motivation: (a) a worker must experience work as being meaningful; (b) a worker must experience responsibility for the outcome of the work; and (c) a worker must have knowledge of the results of the work. From these critical psychological states, they further defined job characteristics which helped to foster them.

1. Skill Variety - the degree to which a job requires a variety of different activities involving the worker's skills and talents.

2. Task Identity - the degree to which the job requires

completion of a "whole" and identifiable piece of work--from beginning to end with a visible outcome.

3. Task Significance - the degree to which the job has a substantial impact on the lives of others, whether inside or outside the organization.

4. Autonomy - the degree to which the job provides substantial freedom, independence, and discretion to the worker in completing the work.

5. Feedback - the degree to which the worker gets clear and direct information on the effectiveness of his performance. The diagram below depicts their relationships and names:

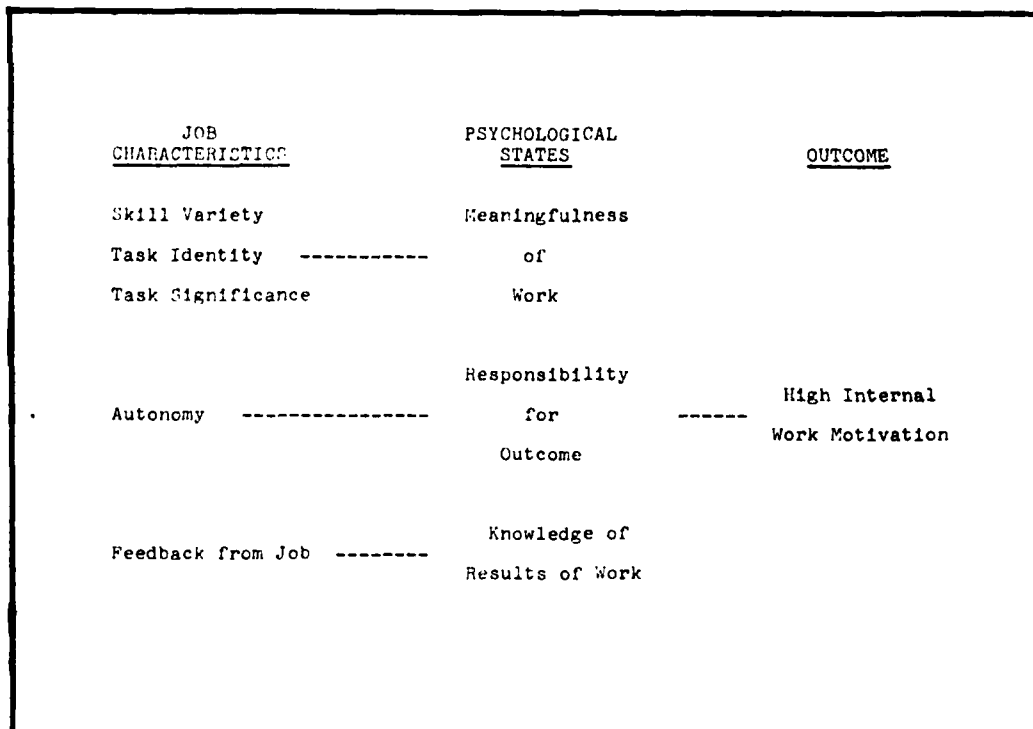


Figure 1. Relationship to motivation

$$MPS = \frac{\text{Skill Variety} + \text{Task Identity} + \text{Task Significance}}{3} \times \text{Autonomy} \times \text{Feedback}$$

Figure 2. Motivating Potential Score

Hackman and Oldham (1980) proposed that the characteristics be combined into a single model to identify jobs that will promote high internal motivation and satisfaction. The model is called the Motivating Potential Score (MPS). Hackman and Oldham used a diagnostic instrument that gives a score of 1 to 7 for each job characteristic, giving the overall MPS score (Hackman and Oldham, 1980).

It should be remembered that the MPS is not a means to motivate workers to work harder and achieve greater job satisfaction. What it does is measure each job to identify those which are high in intrinsic motivation and have the potential to motivate the worker. The MPS must be coupled to the individual's "growth need" to determine if actual increased motivation and job satisfaction will be achieved. If a worker is satisfied at the current level an increase in the MPS will not necessarily correlate with increased job satisfaction--there is no need.

This discussion of work, motivation, and job satisfaction has only scratched the surface. Certain motivation theories, such as Maslow and Herzberg are general and their abilities to be successful in the work environment vary a great deal based on the needs of the individual. Hackman and Oldham, in developing the Motivating Potential Score (MPS), looked at the intrinsic factors in work and developed the capability to measure its motivational potential. Their model however is limited by the "growth need" of workers and gives no easy solution to a manager's quest to increase motivation and job satisfaction. The MPS also looks only at job content factors; other factors such as pay, promotions, supervisory style, and organizational climate also affect job satisfaction (Steers, 1981). In order to achieve increased job satisfaction then, managers must understand their subordinates and use motivational theories as tools. The key to success becomes the selection and implementation of the right tool (Gray & Starke, 1984).

The Organizational Assessment Package (OAP) was developed based on many of the basic concepts discussed in this review (Short, 1985). The OAP survey contains attitudinal and demographic information concerning work group input (including work itself and job enrichment), the work process, and work output. The OAP measures satisfaction/dissatisfaction on the job and provides a vehicle for actions to increase job satisfaction.

Chapter Three is a discussion of the Organizational Assessment Package and the method of analysis used in this report.

Chapter Three

METHOD

The purpose of this chapter is to explain the methodology used in this research. The discussion centers on the instrument used, how the data were collected, the people being looked at, and how the analysis was conducted. "Instrumentation" looks at the Organizational Assessment Package (OAP) and its major characteristics. The second section, "Data Collection," explains the procedures used to collect the data which are discussed later in the report. The section, "Subjects," provides a brief description of the personnel groups which are being evaluated in this report. Lastly, "Procedures" discusses how the analysis was conducted.

Instrumentation

As reported by Short (1985), the OAP is a 109-item survey designed for use by the Air Force Leadership and Management Development Center (LMDC), Maxwell AFB, Alabama. The design of the OAP supports the LMDC mission, which includes (a) to conduct research on Air Force systemic issues using information on the OAP data base; (b) to provide leadership and management training; (c) to provide management consultant services to commanders, managers, supervisors, and functional

staff agencies; and (d) to provide an Air Force-wide management information system for decision making (OAP: Factors and Variables, Appendix C).

The OAP has gone through three versions with the current instrument consisting of 16 demographic items and 93 attitudinal items, broken into seven modules. The modules are (a) background information; (b) job inventory; (c) job desires; (d) supervision; (e) work group effectiveness; (f) organizational climate; and (g) job satisfaction (Short, 1985). Respondents answer by providing a number from 1 to 7 indicating how strongly they agree with the item. A 1 generally indicates strong disagreement or dissatisfaction and a 7 generally indicates strong agreement or satisfaction (Short, 1985). The number value of these answers provides researchers the capability to compare various groups.

Data Collection

All data for the present study came from survey administrations conducted by LMDC as a part of their management consultation program. Data collection using the OAP has not been done on a random sample basis, but rather as a series of opportunity samples. As part of the LMDC mission, the organization receives requests from commanders to visit their units and study the organizational climate. The OAP opportunity samples are a result of these invitational requests. Upon their arrival in the unit, the LMDC team administers the OAP to

every member of the unit present for duty. This administration may take up to five workdays. Individual responses are anonymous and analysis results are confidential between the commander and LMDC team. Although these initial OAP responses are the ones dealt with in this paper, LMDC returns to the unit to readminister the OAP following several months to assess the effects of training and counseling efforts by the staff. The second administration is used as an evaluation tool by both the unit and LMDC (Vermilya, 1985).

The data from the OAP are maintained in a data base containing over 200,000 records and located at Maxwell AFB, Alabama. Data are arranged into two primary files, a history file containing data prior to 30 September 1981, and an active file of data gathered after 1 October 1981. Data analyzed in the present report are from the active file up through 16 September 1985. Inquiries may be made against the data base in a number of demographic sorts or comparisons.

Subjects

The subjects for this study were active duty Air Force personnel, enlisted personnel (70,547), and general officers and civilians (24,694). The total number of subjects was 95,241. The exact sample sizes varied slightly from one analysis to another during the analysis due to some responses being incomplete. Sample size variations, however, were less than 1%. Table 1 further defines the subjects

Table 1

Respondents by Personnel Category

	TAF MAINTENANCE	OTHER MAINTENANCE	OTHER AIR FORCE
Officers	270	212	12,142
Enlisted	3,583	2,712	64,252
Civilian	32	403	24,259

broken down into the three groups to be analyzed: (a) Tactical Air Force (TAF) aircraft maintenance personnel; (b) other command aircraft maintenance personnel; and (c) all other Air Force personnel in the same categories, but different Air Force Specialty Codes (AFSCs). (NOTE: The TAF is defined as personnel in Tactical Air Command (TAC), Pacific Air Force (PACAF), and United States Air Forces Europe (USAFE)).

Further, when considering military personnel, 15.2% were officers and 84.8% were enlisted personnel. These figures compare favorably with 30 December 1984 data for the total Air Force reflecting 17.9% officers and 82.1% enlisted force (Correll, 1985). In addition, male and female percentages of the data base and the Air Force population are nearly identical (male, 88.7% vs 88.1%, and female, 11.2% vs 11.9%). Most other demographic percentages also compare favorably with Air Force-wide demographics.

Procedures

The procedure used to analyze OAP demographic and attitudinal results for maintenance personnel was a comparison by categories (officer, enlisted, and civilian) with results for corresponding Air Force-wide personnel. Maintenance personnel were further broken down by TAF aircraft maintenance personnel and other aircraft maintenance personnel. The statistical procedure used to analyze attitudinal data was ANOVA, which identified any statistically significant differences for each OAP factor between subject groups (TAF, other MAJCOM, Air Force) within personnel categories (officer, enlisted, civilian) at the 95% confidence level. The Newman-Keuls Multiple Comparison Test was then used to specifically identify the differing group(s) at the 95% (alpha less than .05) confidence level. Comparisons were made for 21 OAP factors in four groups for a systems model (OAP - Factors and Variables, Appendix C). These four groups include:

1. Work Itself. Deals with the task properties and environmental conditions of the job (i.e., task autonomy, work repetition, task characteristics, etc.).
2. Job Enrichment. Measures the degree to which the job itself is interesting, meaningful, challenging, and responsible (skill variety, job feedback, task identity).
3. Work Group Process. Assesses the activities and interactions among group members (management/supervision, organizational communications, etc.).

4. Work Group Output. Measures task performance, group development, and effects on group member (pride, advancement/recognition, job satisfaction, etc.).

Chapter Four presents the results of these demographic and attitudinal comparisons.

Chapter Four

RESULTS

This chapter summarizes the results of the OAP survey for the groups discussed in Chapter Three. Demographic data are presented first, followed by information on attitudinal differences of the groups surveyed. Additional, detailed descriptive demographic information can be found in Appendix A and complete ANOVAs of attitudinal results can be found in Appendix B.

Demographic Information

In comparing TAF aircraft maintenance officers to other maintenance officers, and to other Air Force officers participating in the survey, it was found that demographic data were comparable with some exceptions. Over 40% of the Air Force group were 30 years old or younger, while TAF officers had 33% and other maintenance officers had 32% 30 years old or younger. Maintenance officers had a greater amount of time in service; over 65% of both maintenance officer groups had over 8 years in the Air Force, while less than 55% of the other officers had a comparable amount of time. In the area of supervision, over 45% of the overall officer group did not supervise anyone, whereas non-supervisors comprised only 9%

of the TAF maintenance officers and 14% of other maintenance officers. Both groups of maintenance officers had taken more professional military education, and were more likely to make the Air Force a career (TAF, 69%; other MAJCOM, 62%; other Air Force, 51%).

Looking at demographics for enlisted personnel, the percentage of females is four times greater in the overall Air Force group than in the maintenance subgroups (12% versus 3%). TAF maintenance enlisted personnel (44%) and other maintenance enlisted personnel (42%) have fewer individuals with college level educations than the Air Force group (55%). Sixty-two percent of the Air Force enlisted group work a normal day schedule, whereas only 40% of the TAF and 41% of other maintenance personnel work a similar schedule.

Only 3% of the civilians who work in aircraft maintenance career fields are women while over 40% of the overall Air Force civilian group are female. Only 63% of the TAF civilian work force have over 8 years in the Air Force while over 77% of the civilians in maintenance in the other MAJCOMs and 68% of overall Air Force civilians have comparable years of service. Most civilians in TAF (81%) and other MAJCOMs (85%) have greater than 36 months in the aircraft maintenance career field and stay longer at their duty stations. Civilians in the aircraft maintenance career area are almost three times as likely as other Air Force civilians to have some PME (TAF, 56%; other MAJCOM, 62%; other civilian, 21%).

Table 2

Factors with Significant Differences for TAF Maintenance,
Other MAJCOM Maintenance and Other Officers

Factor	Mean	Subset*
Task Characteristics		
TAF (262)	5.29	1
Other Command (203)	5.16	1,2
Other Officers (11,738)	5.35	2
Task Autonomy		
TAF (261)	4.88	2
Other Command (205)	4.89	2
Other Officers (11,760)	4.54	1
Work Repetition		
TAF (267)	4.34	2
Other Command (209)	4.07	1
Other Officers (11,945)	4.32	2
Job Related Training		
TAF (185)	4.23	1
Other Command (209)	4.48	1,2
Other Officers (9,512)	4.70	2
Task Identity		
TAF (266)	4.83	1
Other Command (209)	4.84	1
Other Officers (11,994)	5.24	2
Job Feedback		
TAF (262)	4.91	1
Other Command (209)	4.71	1
Other Officers (12,013)	4.89	1
Advancement/Recognition		
TAF (264)	4.82	2
Other Command (201)	4.88	2
Other Officers (11,496)	4.57	1
General Organizational Climate		
TAF (250)	5.42	2
Other Command (196)	5.49	2
Other Officers (11,268)	5.20	1

* NOTE: Groups not in the same subset are significantly different at the .05 level.

Attitudinal Comparisons

Officers

Of the 21 OAP factors analyzed in this survey, maintenance officers had responses which were significantly different from those of other Air Force officers in 7 factors. In four of these factors (Task Characteristics, Job Related Training, Task Identity, Job Feedback) maintenance officers had a lower response while in three factors (Task Autonomy, Advancement/Recognition, General Organizational Climate) maintenance officers' ratings were higher. In one factor, Work Repetition, other MAJCOM maintenance officers had a significantly lower score when compared to both TAF maintenance officers and all other Air Force officers. Table 2 shows the factors for which there were significant differences.

Enlisted

Significant differences were found in 17 of the OAP factor comparisons for enlisted personnel. Unlike for officer personnel, the differences were scattered throughout the subgroups and cannot be attributed to only one group. TAF enlisted maintenance personnel were significantly different from both other groups on three factors--Job Performance Goals, Task Characteristics, and Organizational Communications Climate. Other MAJCOM maintenance personnel were significantly different from both other groups in Job Feedback and Work Support. Other enlisted personnel were significantly

Table 3

Factors with Significant Differences for TAF Maintenance,
Other MAJCOM Maintenance and Other Enlisted Personnel

Factor	Mean	Subset*
Job Performance Goals		
TAF (3,473)	4.79	2
Other Command (2,615)	4.74	1
Other Enlisted (61,788)	4.73	1
Task Characteristics		
TAF (3,424)	5.10	2
Other Command (2,581)	5.03	1
Other Enlisted (61,087)	5.03	1
Task Autonomy		
TAF (3,426)	3.48	2
Other Command (2,563)	3.41	1
Other Enlisted (61,408)	3.87	3
Work Repetition		
TAF (3,537)	5.31	2
Other Command (2,656)	5.27	2
Other Enlisted (63,170)	5.12	1
Desired Repetitive-Easy Tasks		
TAF (3,479)	3.35	2
Other Command (2,632)	3.37	2
Other Enlisted (61,982)	3.21	1
Skill Variety		
TAF (3,530)	4.71	2
Other Command (2,668)	4.66	2
Other Enlisted (63,095)	4.59	1
Task Identity		
TAF (3,534)	5.09	2
Other Command (2,678)	5.00	1
Other Enlisted (63,122)	5.05	1,2
Task Significance		
TAF (3,544)	5.86	3
Other Command (2,675)	5.79	2
Other Enlisted (63,591)	5.69	1

* NOTE: Groups not in the same subset are significantly different at the .05 level.

Table 3 (Continued)

Factor	Mean	Subset*
Job Feedback		
TAF (3,543)	4.73	2
Other Command (2,675)	4.63	2
Other Enlisted (63,394)	4.77	1
Need for Enrichment		
TAF (3,425)	5.40	1
Other Command (2,581)	5.35	1
Other Enlisted (61,622)	5.48	2
Job Motivation Index		
TAF (3,202)	90.53	2
Other Command (2,370)	85.98	1
Other Enlisted (57,135)	101.61	3
Work Support		
TAF (3,457)	4.57	1
Other Command (2,592)	4.62	2
Other Enlisted (61,769)	4.53	1
Supervisory Comm Climate		
TAF (3,380)	4.34	1
Other Command (2,521)	4.39	1
Other Enlisted (60,156)	4.53	2
Organizational Comm Climate		
TAF (3,269)	4.23	1
Other Command (2,504)	4.33	2
Other Enlisted (58,852)	4.39	2
Advancement/Recognition		
TAF (3,403)	4.19	2
Other Command (2,557)	4.13	1
Other Enlisted (60,933)	4.27	3
Job Related Satisfaction		
TAF (3,095)	4.77	1
Other Command (2,365)	4.83	2
Other Enlisted (55,461)	4.97	3
General Organizational Climate		
TAF (3,293)	4.24	1
Other Command (2,463)	4.27	1
Other Enlisted (58,807)	4.42	2

* NOTE: Groups not in the same subset are significantly different at the .05 level.

different from the two maintenance groups in the factors (a) Work Repetition, (b) Desired Repetitive-Easy Tasks, (c) Skill Variety, (d) Need for Enrichment, (e) Supervisory Communications Climate, and (f) General Organizational Climate. In five factors (Task Autonomy, Task Significance, Job Motivation Index, Advancement/Recognition, and Job Related Satisfaction) all subgroups were found to be significantly different from each other. In Task Identity, only the TAF and other MAJCOM maintenance personnel differed significantly. Table 3 depicts the results for enlisted personnel where significant differences occur.

Civilians

In the case of the civilian personnel, there were only four factors within the survey for which there were significant differences between groups at the .05 level. Job Performance Goals and Task Characteristics were found to be higher for TAF civilian personnel compared to other groups. Also, the Task Autonomy of all civilian maintenance personnel was significantly lower than that for other civilians. Lastly, Skill Variety for TAF maintenance personnel was higher than for both other command maintenance personnel and other civilian personnel. Table 4 summarizes these results.

Table 5 summarizes the ANOVAs with significant differences, broken out by personnel category. As can be seen in Table 5, enlisted personnel have many more factors with significant differences than either the officer or civilian per-

Table 4

Factors with Significant Differences for TAF Maintenance,
Other MAJCOM Maintenance, and Other Civilian Personnel

Factor	Mean	Subset*
Job Performance Goals		
TAF (30)	5.27	2
Other Command (386)	4.86	1
Other Civilians (23,077)	4.85	1
Task Characteristics		
TAF (30)	5.56	2
Other Command (378)	5.32	1
Other Civilians (22,807)	5.31	1
Task Autonomy		
TAF (30)	4.04	1
Other Command (385)	4.07	1
Other Civilians (23,268)	4.59	2
Skill Variety		
TAF (30)	5.55	1
Other Command (394)	5.13	1
Other Civilians (23,725)	5.08	1

*NOTE: Groups not in the same subset are significantly different at the .05 level.

sonnel surveyed.

Chapter Five presents a discussion of several of the factors and the implications of these significant differences.

Table 5

Summary: Significant ANOVAs by Personnel Category

Significant Difference? (x = yes)			
Factor	Officer	Enlisted	Civilian
<u>The Work Itself</u>			
Job Performance Goals		x	x
Task Characteristics	x	x	x
Task Autonomy	x	x	x
Work Repetition	x	x	
Desired Rep-Easy Task		x	
Job Related Training	x		
<u>Job Enrichment</u>			
Skill Variety		x	x
Task Identity	x	x	
Task Significance		x	
Job Feedback	x	x	
Need for Enrichment		x	
Job Motivation Index		x	
<u>Work Group Process</u>			
Work Support		x	
Management/Supervision			
Supervisory Comm Climate		x	
Organizational Comm Climate		x	
<u>Work Group Output</u>			
Pride			
Advancement/Recognition	x	x	
Work Group Effectiveness			
Job Related Satisfaction		x	
Gen Organizational Climate	x	x	
	8	17	4

Chapter Five

DISCUSSION

As reported in the previous chapter, there are only 2 factors of the 21 in the OAP (Management/Supervision and Work Group Effectiveness) in which there are no significant differences between the various subgroups. Because of this large number of differences, this discussion concentrates on a macro-level evaluation of the results. Further, the discussion looks only at results for the officer and enlisted groups, not civilians. This exclusion is based upon limited experience with civilian personnel, the fact there were only four significantly different factors, and the limited scope of the paper. However, the results on civilian personnel may aid others in doing similar studies in more depth.

Officers

Although there are eight factors with significant differences within the officer subgroups, only one of the factors, Work Repetition, reflects a significant attitudinal difference between TAF maintenance officers and other command maintenance officers. Of the seven remaining factors with significant differences, at least one of the maintenance officer groups has an attitudinal difference from the remaining Air Force

officer group. In addition, with regard to Work Repetition, other Air Force officers also indicate a significant difference from other MAJCOM maintenance officers. It would appear then, that there is little difference between the attitudes of TAF maintenance officers and those of their counterparts in other commands. The primary attitudinal differences can be found between Air Force officers as a whole, and one or both of the maintenance officer subgroups.

In analyzing the factors which are significantly different in an attempt to identify trends or correlations between factors, only the factors in Work Group Output (Advancement/Recognition and General Organizational Climate) support a general finding. In the other areas, the factors represent only individual factor attitudinal differences between the subgroups. With respect to Work Group Output, although only two factors had a significant positive difference, all the factors in that grouping were more positive for the subgroups representing maintenance officers. Maintenance officers felt they were better recognized and had a better possibility of advancement/promotion than other officers. They also felt more positive about their organizational climate (spirit, teamwork, pride, and communication). Although these same differences are not illustrated in the individual factors measuring pride, satisfaction, and effectiveness, the scores themselves for the various factors are quite high. It would appear then that although maintenance officers are not con-

sistently different from other Air Force officers in the areas of work itself, job enrichment, and work group process, they register a much more positive attitude in the end result--the work group output.

Enlisted

In contrast to the results for officer personnel, there were numerous attitudinal differences among the enlisted personnel groups. There were only four factors for which comparisons did not reveal a significant difference. Like the officer results, this review of enlisted personnel centers on trends within the various subgroups analyzed.

Unlike officer results, there were 10 factors on which the TAF and other MAJCOM maintenance personnel had significant differences. In 8 of the 10 factors, TAF personnel were more positive than other MAJCOM maintenance personnel in their responses. Seven of these eight more positive responses were in the areas of work itself or job enrichment. The other more positive response was in Advancement/Recognition. The two factors where other MAJCOM maintenance personnel were significantly more positive than TAF maintenance personnel were Organizational Communications Climate and Job Related Satisfaction.

As can be seen by the positive attitudinal differences, TAF maintenance personnel feel more positive than other MAJCOM maintenance personnel about their jobs. To have 7 out

of 10 factors more positive in the TAF than in other MAJCOM maintenance organizations there must be a fundamental difference in the approaches to the job. In this particular case, that difference may be TAF's Production Oriented Maintenance Organization (POMO) (often called Combat Oriented Maintenance Organization (COMO)). This organization was designed to foster smoother working relationships, decentralize both control and authority, and cross-utilize maintenance personnel in tasks (Austin, 1979). It is a system designed to get things done faster and make an individual more responsible for the aircraft. Personnel get a better sense of pride and accomplishment (Beilstein et al., 1984). On the other side, there is a negative difference with regard to Work Support, Organizational Communications Climate, and Job Related Satisfaction when compared to other MAJCOM maintenance personnel. This could be a result of the initial confusion/resistance which occurs when organizations are changed or reorganized. Having improved the job itself, perhaps managers can now move to the process and output stages to increase satisfaction.

In contrasting Air Force enlisted personnel to maintenance personnel, there is once again a fairly clear trend which has developed. In the areas of work itself and job enrichment, maintenance personnel generally have more positive attitudes (five statistically significant differences). These more positive responses, however, come from TAF main-

tenance personnel, and as previously mentioned, may be attributable to POMO. Non-maintenance Air Force personnel, on the other hand, have more positive attitudinal responses to work group process and output. In four of the nine factors their responses were significantly more positive than those of maintenance enlisted personnel. According to Beilstein et al. (1984), the dissatisfaction of maintenance personnel may center on being overworked, under-compensated, and inadequately supported. He further states individuals complain of inconsistent authority relationships and overmanagement--causing people to lose respect for supervision and stifle initiative. Although POMO is a step in the right direction, the work group process and output areas still need to be addressed.

Based on the results and preceeding discussion, Chapter Six presents some conclusions and recommendations to be considered.

Chapter Six

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Overall, there were 19 factors which had significant differences between the subgroups. Because of these results and the scope of this research, the previous discussion was limited to the identification of overall trends within the maintenance career field and avoided lengthy discussion on any one attitudinal factor. This approach necessitates conclusions and recommendations which are general in nature.

In general, maintenance officers, including both the TAF and other MAJCOM's were more positive in their responses to the survey. More specifically, they were more positive in 11 factors while other Air Force officers were more positive in only 7 factors. In the other three factors, only one of the maintenance subgroups was shown to be more positive than other Air Force officers. From this it can be concluded that maintenance officers appear to have more favorable attitudes toward their jobs and should have a higher rate of job satisfaction. Also, there are relatively small differences between TAF maintenance officers and other command maintenance officers. There was only one factor,

Work Repetition, in which there was a significant difference between the groups. From this fact it can be concluded that the two different maintenance organizations represented by TAF and other flying commands have little effect on officers' job attitudes.

With regard to specific factors which maintenance officers rated more negatively than their other Air Force counterparts (Job Related Training and Task Identity) they do not appear to significantly affect their overall job satisfaction, as the maintenance officers are still more satisfied than other Air Force officers. It appears that other factors such as Advancement/Recognition, Pride, General Organizational Climate, etc., provide an effective counterbalance to negative factors and lead to job satisfaction. This is supported by the fact that maintenance officers predict a higher probability of staying in the Air Force and have more time in service than their contemporaries.

With regard to enlisted personnel, the subgroup representing the overall Air Force population is generally more positive in their job attitudes than enlisted maintenance personnel. Of interest however is the fact that these more positive responses center in the areas of work group process and work group output. In four of the nine factors the Air Force enlisted group was significantly more positive. In the two areas, work itself and job enrichment, the TAF and Air Force enlisted were equally divided on which group had the

more positive responses.

In comparing TAF enlisted maintenance personnel to other MAJCOM enlisted maintenance personnel (AFSC 431XX) it is apparent that TAF personnel are more positive in their responses. In the factors Work Itself and Job Enrichment, TAF personnel responded significantly more positively on 7 of the 12 factors. Because we are looking solely at 431XX aircraft maintenance personnel, the reason for this attitude is most likely TAF's use of the POMO/COMO concept. TAF personnel, with their more enriched jobs through the POMO concept, are apparently more positive about their duties.

Recommendations

From the discussion and results of this study, the following recommendations are made:

1. That further studies be taken to identify ways to increase the favorability of attitudes of enlisted maintenance personnel in the factors related to work group process and work group output.
2. That other MAJCOM maintenance staffs consider the more favorable attitudinal responses for TAF enlisted maintenance personnel for possible implementation of POMO/COMO concepts in their commands.
3. That Hq USAF and MAJCOM maintenance career field functional managers review the responses and related attitudes to consider job enrichment changes in organizational

or training programs.

4. That a further study be accomplished, including data prior to 1981, to further test the hypothesis that POMO is the major reason for a significant difference in attitudes between TAF and other MAJCOM maintenance personnel.

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APPENDIX

APPENDIX A

Demographic Information

Table A-1

Number of Respondents by Personnel Category

	TAF (n)	OTH (n)	A.F. (n)
Officer	270	212	12142
Enlisted	3583	2712	64252
Civilian	32	403	24259

Table A-2

Sex by Personnel Category

	TAF		OTH		A.F.	
	Male(%) n = 3736	Female(%) 144	Male(%) 3207	Female(%) 115	Male(%) 80849	Female(%) 19429
Officer	85.2	14.8	84.0	16.0	87.6	12.4
Enlisted	97.1	2.9	97.5	2.5	87.4	12.6
Civilian	96.9	3.1	97.0	3.0	59.1	40.9

Table A-3

Age by Personnel Category

	TAF			OTH			A.F.		
	Off(%) n = 270	Enl(%) 3583	Civ(%) 32	Off(%) 212	Enl(%) 2711	Civ(%) 403	Off(%) 12124	Enl(%) 64246	Civ(%) 24253
17 to 20 Yrs	0.0	11.0	3.1	0.0	15.6	0.2	0.0	13.9	1.2
21 to 25 Yrs	7.0	39.4	3.1	9.4	38.4	5.7	12.3	38.0	6.2
26 to 30 Yrs	26.3	19.2	12.5	22.6	16.9	13.2	28.2	19.6	10.5
31 to 35 Yrs	25.9	14.1	15.6	25.9	13.7	16.6	23.4	14.6	14.4
36 to 40 Yrs	27.8	11.8	21.9	20.3	10.1	14.1	19.4	9.7	14.0
41 to 45 Yrs	10.7	2.9	12.5	14.6	3.1	8.2	11.0	2.9	12.6
46 to 50 Yrs	1.9	0.9	21.9	4.7	1.2	16.1	3.5	0.7	13.9
50 Years	0.4	0.6	9.4	2.4	1.0	25.8	2.2	0.7	27.1

Table A-4

Time in Air Force

	TAF			OTH			A.F.		
	Off(%) n = 270	Enl(%) 3577	Civ(%) 30	Off(%) 212	Enl(%) 2704	Civ(%) 389	Off(%) 12121	Enl(%) 64079	Civ(%) 21466
1 Year	0.7	4.0	3.3	1.9	5.3	1.8	3.3	7.3	5.2
2 to 3 Yrs	3.3	8.9	0.0	4.2	13.2	2.3	5.4	12.2	5.1
3 to 4 Yrs	6.3	11.5	6.7	6.1	11.6	3.9	7.7	12.6	5.3
4 to 8 Yrs	17.8	10.3	3.3	6.1	12.8	2.8	7.2	11.3	5.0
9 to 12 Yrs	18.5	25.4	23.3	16.0	22.0	11.8	21.9	20.1	11.8
13 to 16 Yrs	47.0	13.1	13.3	14.2	10.9	9.0	16.2	13.0	12.6
17 to 20 Yrs		26.8	50.0	51.4	24.3	68.4	38.3	23.5	55.1

Table A-5

Months in Present Career Field

	TAF				OTH				A.F.	
	Off(%)	Enl(%)	Civ(%)	Off(%)	Enl(%)	Civ(%)	Off(%)	Enl(%)	Off(%)	Civ(%)
$\bar{n} = 269$	3563	32		211	2694	399	12055	63880	23614	
6 Months	3.0	2.0	3.1	5.2	3.6	1.3	5.3	5.1	5.7	
6 to 12 Mos	6.3	5.4	0.0	10.0	6.7	2.5	7.6	8.2	7.4	
12 to 18 Mos	4.8	5.2	0.0	6.2	8.2	2.3	7.9	8.4	6.1	
18 to 36 Mos	20.4	16.8	15.6	20.9	18.1	9.5	21.6	21.3	13.6	
36 Months	65.4	70.5	81.3	57.8	63.3	84.5	57.6	57.0	67.3	

Table A-6

Months at Present Duty Station

	TAF				OTH				A.F.	
	Off(%)	Enl(%)	Civ(%)	Off(%)	Enl(%)	Civ(%)	Off(%)	Enl(%)	Off(%)	Civ(%)
$\bar{n} = 269$	3576	32		212	2695	397	12104	63923	23696	
6 Months	15.2	12.2	3.1	15.6	10.7	2.8	13.8	15.7	6.3	
6 to 12 Mos	20.4	17.3	0.0	16.0	17.9	3.5	16.4	18.6	8.0	
12 to 18 Mos	17.8	15.6	0.0	11.3	15.1	3.0	16.4	16.2	6.3	
18 to 36 Mos	41.3	37.9	12.5	41.0	29.5	14.9	35.8	32.0	15.2	
36 Months	5.2	17.1	84.4	16.0	26.8	75.8	17.5	17.5	64.3	

Table A-7

Months in Present Position

	TAF			OTH			A.F.		
	Off(%)	Enl(%)	Civ(%)	Off(%)	Enl(%)	Civ(%)	Off(%)	Enl(%)	Civ(%)
<u>n = 270</u>	<u>270</u>	<u>3563</u>	<u>32</u>	<u>211</u>	<u>2684</u>	<u>396</u>	<u>12093</u>	<u>63855</u>	<u>23849</u>
6 Months	37.8	25.4	6.3	34.6	24.9	6.8	26.1	28.0	14.1
6 to 12 Mos	29.3	22.4	12.5	23.7	22.2	9.3	24.6	24.2	14.9
12 to 18 Mos	17.4	16.7	3.1	12.3	15.4	6.1	17.1	16.4	10.4
18 to 36 Mos	15.2	25.3	28.1	22.7	24.0	22.7	24.9	22.5	19.6
> 36 Months	0.4	10.1	50.0	6.6	13.5	55.1	7.3	8.9	41.1

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Table A-8

Ethnic Group

	TAF			OTH			A.F.		
	Off(%)	Enl(%)	Civ(%)	Off(%)	Enl(%)	Civ(%)	Off(%)	Enl(%)	Civ(%)
<u>n = 270</u>	<u>270</u>	<u>3557</u>	<u>32</u>	<u>211</u>	<u>2684</u>	<u>390</u>	<u>12079</u>	<u>63806</u>	<u>23888</u>
American Indian	0.4	1.4	0.0	0.0	1.7	1.0	0.7	1.4	1.4
Asia/Pacific	1.1	2.1	1.0	0.5	2.2	0.5	1.5	2.0	2.8
Black	7.0	12.4	0.0	6.2	7.0	4.1	5.8	16.9	9.7
Hispanic	3.7	5.3	18.8	2.8	4.6	29.0	2.3	5.2	16.0
White	84.4	75.0	75.0	89.6	81.1	63.1	87.6	71.0	67.3
Other	3.3	3.8	3.1	0.9	3.4	2.3	2.1	3.5	2.9

Marital Status

	<u>C.A.F.</u>						<u>O.T.H.</u>						<u>A.P.</u>					
	Off(%)		Erl(%)	Civ(%)		n	Off(%)		Erl(%)	Civ(%)		n	Off(%)		Erl(%)	Civ(%)		n
Mst Married	18.5		32.5	12.5			17.5		35.4	12.2			21.2		35.7	18.7		
Married	80.0		65.9	84.4			81.5		63.1	84.6			77.2		62.0	75.2		
Sinle Parent	1.5		1.6	3.1			0.9		1.5	3.2			1.6		2.3	6.1		

Table A-1C

Grouse Status: TAF

	Geographically Separated			Not Geographically Separated		
	Off(%)	Enl(%)	Civ(%)	Off(%)	Enl(%)	Civ(%)
$\bar{n} = 7$	217	1	26	209	2139	26
Civilian Employed	1.4	5.3	4.0	25.5	32.0	51.9
Not Employed	1.0	3.1	0.0	61.7	51.4	44.4
Military Employed	1.0	0.8	0.0	9.8	7.4	0.0

Table A-11

Spouse Status: OTH

	Geographically Separated			Not Geographically Separated		
	Off(%)	Enl(%)	Civ(%)	Off(%)	Enl(%)	Civ(%)
<u>n = 7</u>	105	13		165	1603	328
Civilian Employed	3.5	3.5	3.2	27.3	41.8	50.7
Not Employed	0.0	2.2	0.6	60.5	45.0	44.3
Military Employed	0.6	0.0	0.0	8.1	7.1	1.1

Table A-12

Spouse Status: A.F.

	Geographically Separated			Not Geographically Separated		
	Off(%)	Enl(%)	Civ(%)	Off(%)	Enl(%)	Civ(%)
<u>n = 412</u>	3181	1055		8957	36565	17132
Civilian Employed	2.6	4.7	4.0	33.0	34.8	51.0
Not Employed	0.9	2.1	1.0	54.4	45.7	32.1
Military Employed	0.9	1.3	0.8	8.3	13.6	11.1

Table A-13

Educational Level

	TAF			OTH			A.F.		
	Off(%)	Enl(%)	Civ(%)	Off(%)	Enl(%)	Civ(%)	Off(%)	Enl(%)	Civ(%)
n = 268	268	3573	32	212	2695	398	12110	64018	23928
Non HS Grad	0.0	1.0	0.0	0.0	1.1	7.8	0.0	0.7	5.4
HS Grad or GED	0.0	55.1	40.6	0.0	55.4	43.7	0.2	44.2	28.7
2 Yrs College	0.4	30.7	34.4	0.0	28.6	24.4	0.3	35.0	23.9
2 Yrs College	0.0	11.4	21.9	0.9	12.4	20.1	1.4	16.2	18.3
Bachelors Degree	53.7	1.5	3.1	60.4	2.1	3.0	52.8	3.3	15.5
Masters Degree	45.1	0.2	0.0	38.7	0.3	1.0	36.9	0.5	7.1
Doctoral Degree	0.7	0.1	0.0	0.0	0.1	0.0	8.4	0.0	1.0

Table A-14

Professional Military Education

	TAF			OTH			A.F.		
	Off(%)	Enl(%)	Civ(%)	Off(%)	Enl(%)	Civ(%)	Off(%)	Enl(%)	Civ(%)
n = 270	270	2620	32	211	1827	400	12126	43708	24128
None	27.0	26.8	43.8	29.4	32.4	37.8	34.7	31.8	79.3
Phase 1 or 2	0.7	32.0	21.9	0.5	31.6	25.8	1.1	29.7	7.2
Phase 3	1.9	20.8	9.4	0.9	17.1	12.8	1.2	18.9	3.2
Phase 4	1.9	12.0	18.8	4.3	9.7	9.8	0.8	11.5	2.7
SNCOA	0.0	5.8	3.1	0.5	5.8	5.8	0.2	4.8	2.0
SOS	30.7	0.3	0.0	28.0	0.2	0.5	26.6	0.2	1.1
Int Service School	25.6	2.2	3.1	19.4	3.2	7.3	23.3	3.0	3.3
Sr Service School	12.2	0.2	0.0	17.1	0.0	0.5	12.2	0.1	1.3

Table A-15
Number of People Directly Supervised

	TAF			OTH			A.F.		
	Off(%)	Enl(%)	Civ(%)	Off(%)	Enl(%)	Civ(%)	Off(%)	Enl(%)	Civ(%)
n = 267	3287	32		209	2409	402	12083	58313	24136
None	8.9	55.1	75.0	13.4	54.9	64.2	45.6	60.8	75.1
1 Person	8.2	7.5	9.4	9.1	7.3	5.5	6.8	7.6	2.4
2 People	3.4	6.5	0.0	6.7	5.9	1.5	6.1	7.3	2.1
3 People	5.6	4.5	0.0	8.1	5.6	2.5	7.6	5.6	2.3
4 to 5	19.5	8.3	3.1	16.3	9.2	5.0	12.8	7.8	4.5
6 to 8	20.2	6.3	0.0	12.9	5.6	5.7	9.3	4.6	3.7
9 or >	36.3	11.9	12.5	31.1	11.6	15.7	11.8	6.3	9.9

Table A-16

Number of People for Whom Respondent Writes APR/OER/Appraisal

	TAF			OTH			A.F.		
	Off(%)	Enl(%)	Civ(%)	Off(%)	Enl(%)	Civ(%)	Off(%)	Enl(%)	Civ(%)
n = 266	3564	32		212	2706	402	12111	64043	24185
None	19.2	58.2	81.3	25.0	63.8	73.6	52.6	67.2	78.9
1 Person	10.5	10.5	3.1	16.5	8.9	1.5	9.1	8.5	2.1
2 People	7.9	10.0	3.1	10.4	7.1	1.0	6.9	7.7	1.9
3 People	8.3	7.1	0.0	10.8	6.9	3.0	7.1	5.5	2.0
4 to 5	24.1	0.7	0.1	10.5	7.3	1.5	10.9	6.8	3.9
6 to 8	22.6	3.3	0.4	12.3	3.2	1.2	8.1	3.4	3.1
9 or >	7.5	1.2	0.0	3.5	2.3	2.2	5.3	2.0	3.1

	TAF		CTH		A.F.	
	Off(%)	Enl(%)	Off(%)	Enl(%)	Off(%)	Enl(%)
$\bar{n} = 265$	31	3545	208	2667	397	63304
						23407
Yes	84.2	54.0	82.7	59.2	67.8	71.7
No	8.3	35.5	12.0	26.7	14.9	17.4
Not Sure	7.5	10.5	5.3	13.5	17.4	10.9
						8.3
						78.0
						9.4
						12.6

Table A-18
Work Schedule

[illegible]

Table A-19
Supervisor Holds Group Meetings

	TAF			OTH			A.E.		
	Off(%)	Enl(%)	Civ(%)	Off(%)	Enl(%)	Civ(%)	Off(%)	Enl(%)	Civ(%)
$\bar{n} = 267$	3543	32	209	2660	398	11996	63199	23863	
Never	5.2	15.0	4.3	19.9	7.5	6.6	16.4	10.1	
Occasionally	10.9	30.2	17.7	33.3	31.2	23.3	34.0	34.7	
Monthly	1.5	2.6	8.1	5.4	26.4	14.4	9.2	18.6	
Weekly	48.3	19.5	35.9	17.7	17.6	42.2	28.2	30.5	
Daily	31.1	31.0	30.6	21.7	15.3	11.5	10.0	4.3	
Continuously	3.0	1.7	3.3	2.0	2.0	2.0	2.2	1.8	

Table A-20
Supervisor Holds Group Meetings to Solve Problems

	TAF			OTH			A.E.		
	Off(%)	Enl(%)	Civ(%)	Off(%)	Enl(%)	Civ(%)	Off(%)	Enl(%)	Civ(%)
$\bar{n} = 266$	3523	32	210	2660	392	11929	62777	23536	
Never	13.2	28.6	10.5	26.8	26.0	15.5	24.6	24.2	
Occasionally	32.7	38.7	37.6	41.7	47.7	42.3	39.6	44.7	
Half the time	26.9	16.0	29.5	14.7	12.0	21.6	16.8	15.4	
Always	25.2	16.6	22.4	14.8	14.3	20.1	18.9	15.7	

Table A-21
Aeronautical Rating and Current Status

	TAF			OTR			A.F.		
	Off(%)	Enl(%)	Civ(%)	Off(%)	Enl(%)	Civ(%)	Off(%)	Enl(%)	Civ(%)
n = 270	3556	32	87.5	212	2693	382	11971	63016	22873
Nonrated, not on aircrew	88.9	86.0	87.5	80.2	80.3	77.7	60.1	91.3	90.9
Nonrated, now on aircrew	0.4	1.6	0.0	0.0	4.7	2.1	2.5	2.0	0.5
Rated, on crew/ops job	1.1	4.1	3.1	1.4	2.8	6.8	28.2	1.4	1.5
Rated, in support job	9.6	6.3	9.4	18.4	12.2	13.4	9.2	5.3	7.1

Table A-22

Career Intent

	TAF			OTR			A.F.		
	Off(%)	Enl(%)	Civ(%)	Off(%)	Enl(%)	Civ(%)	Off(%)	Enl(%)	Civ(%)
n = 269	3564	32	87.5	211	2686	377	12074	63897	20786
Retire in 12 months	0.7	3.9	3.1	3.8	3.2	6.6	3.4	3.0	6.3
Career	69.1	36.3	59.4	62.1	33.2	59.7	50.5	34.8	51.2
Likely Career	13.4	19.7	18.8	18.0	19.3	21.0	22.8	18.7	23.5
Maybe Career	9.7	19.5	9.4	10.9	20.6	8.8	15.3	20.7	12.7
Probably not Career	4.8	12.1	6.3	1.9	14.1	1.9	5.1	13.7	3.5
Separate	2.2	6.5	3.1	3.3	10.2	2.1	3.0	9.0	2.8

APPENDIX

APPENDIX B

Attitudinal Results

Table B-1

Comparison of OAP Factor Scores Between
TAF, Other Command, and Other Officers (AF)

THE WORK ITSELF					
	Mean	SD	Subset	df	F
Job Performance Goals				2,12130	0.78
TAF Officers	4.66	1.04	1		
Other Command	4.67	1.00	1		
Other Officers	4.73	0.98	1		
Task Characteristics				2,12197	4.32*
TAF Officers	5.29	0.94	1,2		
Other Command	5.16	1.04	1		
Other Officers	5.35	0.95	2		
Task Autonomy				2,12226	14.13***
TAF Officers	4.88	1.16	2		
Other Command	4.89	1.21	2		
Other Officers	4.54	1.36	1		
Work Perseveration				2,12418	3.36*
TAF Officers	4.34	1.19	2		
Other Command	4.07	1.17	1		
Other Officers	4.32	1.37	2		
Desired Repetitive/ Easy Task				2,12052	1.43
TAF Officers	2.37	1.07	1		
Other Command	2.43	1.00	1		
Other Officers	2.48	1.05	1		
Job Related Training				2,9852	10.97***
TAF Officers	4.23	1.48	1		
Other Command	4.48	1.45	1,2		
Other Officers	4.70	1.47	2		

NOTE: Groups not in the same subset are significantly different at the .05 level.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table B-1 (Continued)

JOB ENRICHMENT					
	Mean	SD	Subset	df	F
Skill Variety				2,12499	2.96
TAF Officers	5.40	1.34	1		
Other Command	5.23	1.38	1		
Other Officers	5.45	1.28	1		
Task Identity				2,12466	25.77***
TAF Officers	4.83	1.19	1		
Other Command	4.84	1.34	1		
Other Officers	5.24	1.21	2		
Task Significance				2,12518	3.97*
TAF Officers	6.00	1.23	1		
Other Command	5.86	1.39	1		
Other Officers	5.79	1.25	1		
Job Feedback				2,12486	2.55
TAF Officers	4.91	1.17	1		
Other Command	4.71	1.21	1		
Other Officers	4.89	1.18	1		
Need for Enrichment				2,12207	0.35
TAF Officers	6.13	0.89	1		
Other Command	6.09	0.96	1		
Other Officers	6.09	0.86	1		
Job Motivation Index				2,11414	1.75
TAF Officers	133.72	65.46	1		
Other Command	130.28	67.46	1		
Other Officers	126.20	67.36	1		

NOTE: Groups not in the same subset are significantly different at the .05 level.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table B-1 (Continued)

WORK GROUP PROCESS					
	Mean	SD	Subset	df	F
Work Support				2,12037	4.39*
TAF Officers	4.67	1.05	1		
Other Command	4.73	1.10	1		
Other Officers	4.55	1.09	1		
Management Supervision				2,11782	0.27
TAF Officers	5.32	1.45	1		
Other Command	5.33	1.45	1		
Other Officers	5.31	1.34	1		
Supvry Communications				2,11530	3.05*
TAF Officers	4.65	1.58	1		
Other Command	4.79	1.54	1		
Other Officers	4.87	1.41	1		
Crnl Communications				2,11644	4.30*
TAF Officers	5.06	1.25	1		
Other Command	5.07	1.20	1		
Other Officers	4.88	1.26	1		

NOTE: Groups not in the same subset are significantly different at the .05 level.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table B-1 (Continued)

WORK GROUP OUTPUT					
	Mean	SD	Subset	df	F
Pride				2,12453	0.68
TAF Officers	5.56	1.47	1		
Other Command	5.42	1.47	1		
Other Officers	5.48	1.39	1		
Advancement/Recognition				2,11598	12.34***
TAF Officers	4.82	1.14	2		
Other Command	4.88	1.15	2		
Other Officers	4.57	1.19	1		
Work Group Effectiveness				2,12080	0.33
TAF Officers	5.83	1.01	1		
Other Command	5.78	1.06	1		
Other Officers	5.77	1.08	1		
Job Related Satisfaction				2,11264	0.57
TAF Officers	5.39	1.14	1		
Other Command	5.44	1.04	1		
Other Officers	5.36	1.09	1		
General Org Climate				2,11711	8.98***
TAF Officers	5.42	1.26	2		
Other Command	5.49	1.15	2		
Other Officers	5.20	1.25	1		

NOTE: Groups not in the same subset are significantly different at the .05 level.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table B-2

Comparison of OAP Factor Scores Between
TAP, Other Command Enlisted, and Other Enlisted

THE WORK ITSELF					
	Mean	SD	Subset	df	F
Job Performance Goals				2,67873	4.65**
TAP Enlisted	4.79	0.95	2		
Other Command	4.74	0.96	1		
Other Enlisted	4.73	0.98	1		
Task Characteristics				2,67089	8.08***
TAP Enlisted	5.10	0.92	2		
Other Command	5.03	0.93	1		
Other Enlisted	5.03	1.01	1		
Task Autonomy				2,67394	248.32***
TAP Enlisted	3.48	1.43	2		
Other Command	3.41	1.36	1		
Other Enlisted	3.87	1.42	3		
Work Repetition				2,69360	45.67***
TAP Enlisted	5.31	1.27	2		
Other Command	5.27	1.31	2		
Other Enlisted	5.12	1.38	1		
Desired Repetitive/ Boring Tasks				2,68090	38.96***
TAP Enlisted	3.35	1.45	2		
Other Command	3.37	1.40	2		
Other Enlisted	3.21	1.41	1		
Job related Training				2,66371	4.52*
TAP Enlisted	4.41	1.54	1		
Other Command	4.43	1.56	1		
Other Enlisted	4.48	1.58	1		

NOTE: Groups not in the same subset are significantly different at the .05 level.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table B-2 (Continued)

JOB ENRICHMENT					
	Mean	SD	Subset	df	F
Skill Variety				2,69290	14.83***
TAF Enlisted	4.71	1.35	2		
Other Command	4.66	1.36	2		
Other Enlisted	4.59	1.47	1		
Task Identity				2,69403	3.49*
TAF Enlisted	5.09	1.16	2		
Other Command	5.00	1.18	1		
Other Enlisted	5.05	1.26	1,2		
Task Significance				2,69809	35.48***
TAF Enlisted	5.86	1.22	3		
Other Command	5.79	1.25	2		
Other Enlisted	5.69	1.32	1		
Job Feedback				2,69609	14.44***
TAF Enlisted	4.73	1.28	2		
Other Command	4.63	1.25	2		
Other Enlisted	4.77	1.29	1		
Need for Enrichment				2,67625	21.05***
TAF Enlisted	5.40	1.21	1		
Other Command	5.35	1.22	1		
Other Enlisted	5.48	1.24	2		
Job Motivation Index				2,62704	112.60***
TAF Enlisted	90.53	59.05	2		
Other Command	85.98	55.29	1		
Other Enlisted	101.61	63.31	3		

NOTE: Groups not in the same subset are significantly different at the .05 level.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table B-2 (Continued)

WORK GROUP PROCESS					
	Mean	SD	Subset	df	F
Work Support				2,67815	10.77***
TAF Enlisted	4.57	1.09	1		
Other Command	4.62	1.09	2		
Other Enlisted	4.53	1.12	1		
Management Supervisor				2,65802	2.69
TAF Enlisted	4.85	1.58	1		
Other Command	4.85	1.52	1		
Other Enlisted	4.90	1.58	1		
Supply Communications				2,66054	29.02***
TAF Enlisted	4.34	1.63	1		
Other Command	4.39	1.59	1		
Other Enlisted	4.53	1.64	2		
Orgnl Communications				2,64622	23.43***
TAF Enlisted	4.23	1.33	1		
Other Command	4.33	1.28	2		
Other Enlisted	4.39	1.32	2		

NOTE: Groups not in the same subset are significantly different at the .05 level.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table B-2 (Continued)

WORK GROUP OUTPUT					
	Mean	SD	Subset	df	F
Pride				2,69127	0.86
TAF Enlisted	4.94	1.58	1		
Other Command	4.90	1.61	1		
Other Enlisted	4.90	1.65	1		
Advancement/Recognition				2,66890	26.02***
TAF Enlisted	4.19	1.19	2		
Other Command	4.13	1.16	1		
Other Enlisted	4.27	1.20	3		
Work Group Effectiveness				2,66988	2.06
TAF Enlisted	5.45	1.20	1		
Other Command	5.42	1.20	1		
Other Enlisted	5.47	1.25	1		
Job Related Satisfaction				2,60918	51.29***
TAF Enlisted	4.77	1.23	1		
Other Command	4.83	1.20	2		
Other Enlisted	4.97	1.22	3		
General Org Climate				2,64560	37.90***
TAF Enlisted	4.24	1.40	1		
Other Command	4.27	1.36	1		
Other Enlisted	4.42	1.40	2		

NOTE: Groups not in the same subset are significantly different at the .05 level.

* $p < .05$ ** $p < .01$ *** $p < .001$.

Table B-3

Comparison of OAP Factor Scores Between
TAF, Other MAJCOM, and Other Civilians

THE WORK ITSELF					
	Mean	SD	Subset	df	F
Job Performance Goals				2,23490	2.64
TAF Civilians	5.27	0.85	2		
Other Command	4.86	1.01	1		
Other Civilians	4.85	1.00	1		
Task Characteristics				2,23212	2.17
TAF Civilians	5.67	0.69	2		
Other Command	5.32	0.96	1		
Other Civilians	5.31	0.95	1		
Task Autonomy				2,23680	30.58***
TAF Civilians	4.04	1.61	1		
Other Command	4.07	1.34	1		
Other Civilians	4.59	1.35	2		
Work Repetition				2,24188	1.88
TAF Civilians	5.06	1.20	1		
Other Command	4.73	1.22	1		
Other Civilians	4.65	1.44	1		
Work Repetitive/ Easy Tasks				2,23646	4.58*
TAF Civilians	3.45	1.46	1		
Other Command	3.28	1.38	1		
Other Civilians	3.09	1.40	1		
Job Related Training				2,21957	0.52
TAF Civilians	4.81	1.74	1		
Other Command	4.49	1.65	1		
Other Civilians	4.47	1.67	1		

NOTE: Groups not in the same subset are significantly different at the .05 level.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table B-3 (Continued)

JOB ENRICHMENT					
	Mean	SE	Subset	df	F
Skill Variety				2,24146	2.07
TAF Civilians	5.55	1.11	1		
Other Commands	5.13	1.22	1		
Other Civilians	5.08	1.37	1		
Task Identity				2,24205	2.00
TAF Civilians	5.59	1.06	1		
Other Commands	5.24	1.21	1		
Other Civilians	5.34	1.17	1		
Task Significance				2,24258	3.02*
TAF Civilians	6.06	0.97	1		
Other Commands	5.84	1.21	1		
Other Civilians	5.71	1.26	1		
Job Feedback				2,24259	2.09
TAF Civilians	5.33	1.08	1		
Other Commands	4.95	1.24	1		
Other Civilians	5.06	1.27	1		
Need for Enrichment				2,23421	13.16***
TAF Civilians	5.65	1.46	1		
Other Commands	5.39	1.25	1		
Other Civilians	5.70	1.18	1		
Job Motivation Index				2,21688	10.40***
TAF Civilians	124.48	72.21	1		
Other Commands	114.51	66.63	1		
Other Civilians	131.51	70.43	1		

NOTE: Groups not in the same subset are significantly different at the .05 level.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table B-3 (Continued)

WORK GROUP PROCESS					
	Mean	SD	Subset	df	F
Work Support				2,23459	3.31*
TAM Civilians	4.50	1.05	1		
Other Commands	4.53	1.10	1		
Other Civilians	4.67	1.11	1		
Management Supervision				2,22833	3.48*
TAM Civilians	4.68	1.65	1		
Other Commands	4.77	1.66	1		
Other Civilians	4.98	1.64	1		
Supply Communications				2,22735	7.53***
TAM Civilians	4.25	1.90	1		
Other Commands	4.25	1.74	1		
Other Civilians	4.58	1.70	1		
Signal Communications				2,22357	14.27***
TAM Civilians	4.53	1.49	1		
Other Commands	4.22	1.47	1		
Other Civilians	4.62	1.41	1		

NOTE: Groups not in the same subset are significantly different at the .05 level.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 3-3 (Continued)

WORK GROUP OUTPUT					
	Mean	SD	Subset	df	
Pride				2,24187	1 .4***
TAF Civilians	5.84	1.17	1		
Other Commands	5.73	1.36	1		
Other Civilians	5.42	1.45	1		
Advancement/Recognition				2,22527	5.02**
TAF Civilians	3.66	1.22	1		
Other Commands	3.58	1.28	1		
Other Civilians	3.80	1.34	1		
Work Group Effectiveness				2,23358	0.00
TAF Civilians	5.41	1.13	1		
Other Commands	5.03	1.24	1		
Other Civilians	5.04	1.25	1		
Job Related Satisfaction				2,21962	1.05
TAF Civilians	5.53	1.03	1		
Other Commands	5.35	1.08	1		
Other Civilians	5.42	1.08	1		
General Org Climate				2,22297	6.05**
TAF Civilians	4.45	1.32	1		
Other Commands	4.55	1.37	1		
Other Civilians	4.79	1.39	1		

NOTE: Groups not in the same subset are significantly different at the .05 level.

* $p < .05$. ** $p < .01$. *** $p < .001$.

APPENDIX

APPENDIX C

OAP Factors and Variables

FACTORS AND VARIABLES OF THE ORGANIZATIONAL ASSESSMENT PACKAGE

The OAP is a 109-item survey questionnaire designed jointly by the Air Force Human Resources Laboratory and the Leadership and Management Development Center (LMDC) and is used to aid LMDC in its missions to: (a) conduct research on Air Force systemic issues using information in the OAP database, (b) provide leadership and management training, and (c) provide management consultation service to Air Force commanders upon request.

Allowable responses to the attitudinal items on the survey range from 1 (low) to 7 (high). The attitudinal items are grouped into 25 factors that address such areas as the job itself, management and supervision, communications, and performance in the organization. Each data record consists of 7 externally coded descriptors and 24 demographic items as well as the responses to the 93 attitudinal items.

The factors measured by the OAP are grouped into a systems model to assess three aspects of a work group: input, process, and output (adapted from McGrath's model).

Input. In LMDC's adaptation of the model, input is comprised of demographics, work itself, and job enrichment.

A. Demographics. Descriptive or background information about the respondents to the OAP survey.

B. Work Itself. The work itself has to do with the task properties (technologies) and environmental conditions of the job. It assesses the patterns of characteristics members bring to the group or organization, and patterns of differentiation and integration among position and roles. The following OAP factors measure the work itself:

- 605 - Job Desires (Need For Enrichment)
- 810 - Job Performance Goals
- 812 - Task Characteristics
- 813 - Task Autonomy
- 814 - Work Repetition
- 816 - Desired Repetitive Easy Tasks
- 823 - Job Related Training
- Job Influences (not a statistical factor)

C. Job Enrichment. Measures the degree to which the job itself is interesting, meaningful, challenging, and responsible. The following OAP factors measure job enrichment:

- 800 - Skill Variety
- 801 - Task Identity
- 802 - Task Significance
- 804 - Job Feedback
- 806 - Need for Enrichment Index (Job Desires)
- 807 - Job Motivation Index

- 808 - QII Total Score
- 809 - Job Motivation Index - Additive
- 825 - Motivation Potential Score

Work Group Process. The work group assesses the pattern of activity and interaction among the group members. The following OAP factors measures leadership and the work group process:

- 805 - Performance Barriers/Blockages (Work Support)
- 818 - Management and Supervision
- 819 - Supervisory Communications Climate
- 820 - Organizational Communications Climate
- Work Interferences (not a statistical factor)
- Supervisory Assistance (not a statistical factor)

Work Group Output. Measures task performance, group development, and effects on group members. Assesses the quantity and quality of task performance and alteration of the group's relation to the environment. Assesses changes in positions and role patterns, and in the development of norms. Assesses changes on skills and attitudes, and effects on adjustment. The following OAP factors measure the work group output:

- 811 - Pride
- 817 - Advancement/Acognition
- 821 - Work Group Effectiveness (Perceived Productivity)
- 822 - Job Related Satisfaction
- 824 - General Organizational Climate

EXTERNALLY CODED DESCRIPTORS

Batch Number
Julian Date of Survey
Major Command
Base Code
Consultation Method
Consultant Code
Survey Version

(Note: These items are concatenated to each data record during EDP processing.)

DEMOGRAPHIC ITEMS (NOT A STATISTICAL FACTOR)

Variable Number	Statement Number	Statement
-	-	Supervisor's Code
-	-	Work Group Code
-	-	Sex
-	-	Your age is
-	-	You are (officer, enlisted, GS, etc.)
-	-	Your pay grade is
-	-	Primary AFSC
-	-	Duty AFSC
(Note: The above items are on the response sheet.)		
001	-	(Not used)
002	-	(Not used)
003	1	Total years in the Air Force:
		1. Less than 1 year
		2. More than 1 year, less than 2 years
		3. More than 2 years, less than 3 years
		4. More than 3 years, less than 4 years
		5. More than 4 years, less than 6 years
		6. More than 6 years

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Variable Number	Statement Number	Statement
004	2	Total months in present career field:
		1. Less than 1 month
		2. More than 1 month, less than 6 months
		3. More than 6 months, less than 12 months
		4. More than 12 months, less than 18 months
		5. More than 18 months, less than 24 months
		6. More than 24 months, less than 36 months
		7. More than 36 months
005	3	Total months at this station:
		1. Less than 1 month
		2. More than 1 month, less than 6 months
		3. More than 6 months, less than 12 months
		4. More than 12 months, less than 18 months
		5. More than 18 months, less than 24 months
		6. More than 24 months, less than 36 months
		7. More than 36 months
006	4	Total months in present position:
		1. Less than 1 month
		2. More than 1 month, less than 6 months
		3. More than 6 months, less than 12 months
		4. More than 12 months, less than 18 months
		5. More than 18 months, less than 24 months
		6. More than 24 months, less than 36 months
		7. More than 36 months
007	5	Your Ethnic Group is:
		1. American Indian or Alaskan Native
		2. Asian or Pacific Islander
		3. Black, not of Hispanic Origin
		4. Hispanic
		5. White, not of Hispanic Origin
		6. Other
008	11	Which of the following "best" describes your marital status?
		0. Not married.
		1. Married: Spouse is a civilian employed outside home.
		2. Married: Spouse is a civilian employed outside home - geographically separated.
		3. Married: Spouse not employed outside home.
		4. Married: Spouse not employed outside home - geographically separated.
		5. Married: Spouse is a military member.
		6. Married: Spouse is a military member - geographically separated.
		7. Single parent.

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Appendix C

Variable Number	Statement Number	Statement
009	6	<p>Your highest education level obtained is:</p> <ol style="list-style-type: none"> 1. Non-high school graduate 2. High school graduate or GED 3. Less than two years college 4. Two years or more college 5. Bachelors Degree 6. Masters Degree 7. Doctoral Degree
010	7	<p>Highest level of professional military education (residence or correspondence):</p> <ol style="list-style-type: none"> 0. None or not applicable 1. MCO Orientation Course or USAF Supervisor Course (MCO Phase 1 or 2) 2. MCO Leadership School (MCO Phase 3) 3. MCO Academy (MCO Phase 4) 4. Senior MCO Academy (MCO Phase 5) 5. Squadron Officer School 6. Intermediate Service School (i.e., ACSC, AFSC) 7. Senior Service School (i.e., JMC, ICAF, WMC)
011	8	<p>How many people do you directly supervise?</p> <ol style="list-style-type: none"> 1. None 2. 1 3. 2 4. 3 5. 4 to 5 6. 6 to 8 7. 9 or more
012	9	<p>For how many people do you write performance reports?</p> <ol style="list-style-type: none"> 1. None 2. 1 3. 2 4. 3 5. 4 to 5 6. 6 to 8 7. 9 or more
013	10	<p>Does your supervisor actually write your performance report?</p> <ol style="list-style-type: none"> 1. Yes 2. No 3. Not sure
014	11	<p>Your work requires you to work primarily:</p> <ol style="list-style-type: none"> 1. Alone 2. With one or two people 3. As a small work group (3-5 people) 4. As a large work group (6 or more people) 5. Other
015	12	<p>What is your usual work schedule?</p> <ol style="list-style-type: none"> 1. Day shift, normally stable hours 2. Swing shift (about 1600-2400) 3. Mid shift (about 2400-0800) 4. Rotating shift schedule 5. Day or shift work with irregular/unstable hours 6. Frequent TDY/travel or frequently on-call to report to work 7. Crew schedule
016	13	<p>How often does your supervisor hold group meetings?</p> <ol style="list-style-type: none"> 1. Never 2. Occasionally 3. Monthly 4. Weekly 5. Daily 6. Continuously
017	14	<p>How often are group meetings used to solve problems and establish goals?</p> <ol style="list-style-type: none"> 1. Never 2. Occasionally 3. About half the time 4. All of the time
018	15	<p>What is your aeronautical rating and current status?</p> <ol style="list-style-type: none"> 1. Nonrated, not on aircrew 2. Nonrated, now on aircrew 3. Rated, in crew/operations job 4. Rated, in support job

Appendix C

FACTORS

Each 800 series factor consists of two or more variables which correspond to statements in the OAP. A mean score can be derived for each factor except 805, 807, 808, 809 and 825 by using a "straight average." The formula for computing the exceptions is indicated.

FACTOR 800 - SKILL VARIETY: Measures the degree to which a job requires a variety of different tasks or activities in carrying out the work; involves the use of a number of different skills and talents of the worker; skills required are valued by the worker.

Variable Number	Statement Number	Statement
201	17	To what extent does your job require you to do many different things, using a variety of your talents and skills?
212	29	To what extent does your job require you to use a number of complex skills?

FACTOR 801 - TASK IDENTITY: Measures the degree to which the job requires completion of a "whole" and identifiable piece of work from beginning to end.

Variable Number	Statement Number	Statement
202	18	To what extent does your job involve doing a whole task or unit of work?
211	28	To what extent does your job provide you with a chance to finish completely the piece of work you have begun?

Variable Number	Statement Number	Statement
019	16	Which of the following best describes your career or employment intentions?
		1. Planning to retire in the next 12 months
		2. Will continue in/with the Air Force as a career
		3. Will most likely continue in/with the Air Force
		4. May continue in/with the Air Force
		5. Will most likely not make the Air Force a career
		6. Will separate/terminate from the Air Force as soon as possible

NOTE: Variable 008, Statement 11 was added to the OAP on 19 Jan 80 and replaced variable 014 which appears on page 6. Although no longer used, Variable 014 is still shown because data collected from about 25,000 samples for this variable are still in the data base.

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FACTOR 802 - TASK SIGNIFICANCE: Measures the degree to which the job has a substantial impact on the lives or work of others; the importance of the job.

Variable Number	Statement Number	Statement
203	19	To what extent is your job significant in that it affects others in some important way?
210	27	To what extent does doing your job well affect a lot of people?

FACTOR 803 (NOT USED)

FACTOR 804 - JOB FEEDBACK: Measures the degree to which carrying out the work activities required by the job results in the worker obtaining clear and direct information about job outcomes or information on good and poor performance.

Variable Number	Statement Number	Statement
272	22	To what extent are you able to determine how well you are doing your job without feedback from anyone else?
209	26	To what extent does your job provide the chance to know for yourself when you do a good job, and to be responsible for your own work?

FACTOR 805 - WORK SUPPORT: Measures the degree to which work performance is hindered by additional duties, details, inadequate tools, equipment, or work space.

Variable Number	Statement Number	Statement
206	23	To what extent do additional duties interfere with the performance of your primary job?
207	24	To what extent do you have adequate tools and equipment to accomplish your job?
208	25	To what extent is the amount of work space provided adequate?

Formula $(8-206+207+208)/3$

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FACTOR 806 - NEED FOR ENRICHMENT INDEX (JOB DESIRES): Has to do with job related characteristics (autonomy, personal growth, use of skills, etc.) that the individual would like in a job.

Variable Number	Statement Number	Statement
249	51	Opportunities to have independence in my work.
250	52	A job that is meaningful.
251	53	The opportunity for personal growth in my job.
252	54	Opportunities in my work to use my skills.
253	55	Opportunities to perform a variety of tasks.

FACTOR 807 - JOB MOTIVATION INDEX: A composite index derived from the six job characteristics that reflect the overall "motivating potential" of a job; the degree to which a job will prompt high internal work motivation on the part of job incumbents.

Index is computed using the following factors:

800	Skill variety
801	Task identity
802	Task significance
805	Performance barriers/blockages
813	Task autonomy
804	Job feedback

Formula $((800+801+802+805)/4)+813+804$

FACTOR 808 - QJI TOTAL SCORE: Assesses one's perception of motivation provided by his or her job. This factor is a variation of a scale employed by other job motivation theorists.

Score is computed using the variables in the following formula:

Formula $(V201+V203+V203+V270+V271+V272+8+V206+V207+V208+V209+V210+V211+V212+V213)$

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FACTOR 809 - JOB MOTIVATION INDEX ---- ADDITIVE: This factor is a variation of a scale employed by other job motivation theorists.

Index is computed using the following factors:

800	Skill variety
801	Task identity
802	Task significance
803	Performance barriers/blockages
804	Task autonomy
804	Work repetition

$$\text{Formula } ((800+801+802+803)/4) \cdot 813 \cdot 804$$

FACTOR 810 - JOB PERFORMANCE GOALS: Measures the extent to which job performance goals are clear, specific, realistic, understandable, and challenging.

Variable Number	Statement
217	To what extent do you know exactly what is expected of you in performing your job?
218	To what extent are your job performance goals difficult to accomplish?
273	To what extent are your job performance goals clear?
274	To what extent are your job performance goals specific?
221	To what extent are your job performance goals realistic?

FACTOR 811 - PRIDE: Measures the pride in one's work.

Variable Number	Statement
215	To what extent are you proud of your job?
275	To what extent does your work give you a feeling of pride?

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FACTOR 812 - TASK CHARACTERISTICS: A combination of skill variety, task identity, task significance, and job feedback designed to measure several aspects of one's job.

Variable Number	Statement
201	To what extent does your job require you to do many different things, using a variety of your talents and skills?
202	To what extent does your job involve doing a whole task or unit of work?
203	To what extent is your job significant, in that it affects others in some important way?
272	To what extent are you able to determine how well you are doing your job without feedback from anyone else?
209	To what extent does your job provide the chance to know for yourself when you do a good job, and to be responsible for your own work?
210	To what extent does doing your job well affect a lot of people?
211	To what extent does your job provide you with a chance to finish completely the piece of work you have begun?
212	To what extent does your job require you to use a number of complex skills?

FACTOR 813 - TASK AUTONOMY: Measures the degree to which the job provides freedom to do the work as one sees fit; discretion in scheduling, decision making, and means for accomplishing a job.

Variable Number	Statement
270	To what extent does your job provide a great deal of freedom and independence in scheduling your work?
271	To what extent does your job provide a great deal of freedom and independence in selecting your own procedures to accomplish it?
213	To what extent does your job give you freedom to do your work as you see fit?
214	To what extent are you allowed to make the major decisions required to perform your job well?

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FACTOR 814 - WORK REPETITION: Measures the extent to which one performs the same tasks or faces the same type of problems in his or her job on a regular basis.

Variable Number	Statement Number	Statement
226	39	To what extent do you perform the same tasks repeatedly within a short period of time?
227	40	To what extent are you faced with the same type of problem on a weekly basis?

FACTOR 815 (NOT USED)

FACTOR 816 - DESIRED REPETITIVE EASY TASKS: Measures the extent to which one desires his or her job involve repetitive tasks or tasks that are easy to accomplish.

Variable Number	Statement Number	Statement
255	56	A job in which tasks are repetitive.
258	57	A job in which tasks are relatively easy to accomplish.

FACTOR - JOB INFLUENCES (NOT A STATISTICAL FACTOR):

Variable Number	Statement Number	Statement
216	33	To what extent do you feel accountable to your supervisor in accomplishing your job?
238	42	To what extent do co-workers in your work group maintain high standards of performance?

FACTOR 817 - ADVANCEMENT/RECOGNITION: Measures one's awareness of advancement and recognition, and feelings of being prepared (i.e., learning new skills for promotion).

Variable Number	Statement Number	Statement
234	41	To what extent are you aware of promotion/advancement opportunities that affect you?
239	43	To what extent do you have the opportunity to progress up your career ladder?

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240	44	To what extent are you being prepared to accept increased responsibility?
241	45	To what extent do people who perform well receive recognition?
276	47	To what extent do you have the opportunity to learn skills which will improve your promotion potential?

FACTOR 818 - MANAGEMENT and SUPERVISION (A): Measures the degree to which the worker has high performance standards and good work procedures. Measures support and guidance received, and the overall quality of supervision.

Variable Number	Statement Number	Statement
404	58	My supervisor is a good planner.
405	59	My supervisor sets high performance standards.
410	60	My supervisor encourages teamwork.
411	61	My supervisor represents the group at all times.
412	62	My supervisor establishes good work procedures.
413	63	My supervisor has made his responsibilities clear to the group.
445	64	My supervisor fully explains procedures to each group member.
416	65	My supervisor performs well under pressure.

FACTOR - MANAGEMENT and SUPERVISION (B): (NOT A STATISTICAL FACTOR)

Variable Number	Statement Number	Statement
424	66	My supervisor takes time to help me when needed.
434	71	My supervisor lets me know when I am doing a poor job.
439	75	When I need technical advice, I usually go to my supervisor.

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FACTOR 819 - SUPERVISORY COMMUNICATIONS CLIMATE: Measures the degree to which the worker perceives that there is good rapport with supervisors, that there is a good working environment, that innovation for task improvement is encouraged, and that rewards are based upon performance.

Variable Number	Statement Number	Statement
426	67	My supervisor asks members for their ideas on task improvements.
428	68	My supervisor explains how my job contributes to the overall mission.
431	69	My supervisor helps me set specific goals.
433	70	My supervisor lets me know when I am doing a good job.
435	72	My supervisor always helps me improve my performance.
436	73	My supervisor insures that I get job related training when needed.
437	74	My job performance has improved due to feedback received from my supervisor.
442	76	My supervisor frequently gives me feedback on how well I am doing my job.

FACTOR 820 - ORGANIZATIONAL COMMUNICATIONS CLIMATE: Measures the degree to which the worker perceives that there is an open communications environment in the organization, and that adequate information is provided to accomplish the job.

Variable Number	Statement Number	Statement
300	82	Ideas developed by my work group are readily accepted by management personnel above my supervisor.
301	83	My organization provides all the necessary information for me to do my job effectively.
302	84	My organization provides adequate information to my work group.
303	85	My work group is usually aware of important events and situations.
304	86	My complaints are aired satisfactorily.
309	91	The information in my organization is widely shared so that those needing it have it available.

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314	96	My organization has clear-cut goals.
317	99	The goals of my organization are reasonable.
318	100	My organization provides accurate information to my work group.

FACTOR 821 - WORK GROUP EFFECTIVENESS: Measures one's view of the quantity, quality, and efficiency of work generated by his or her work group.

Variable Number	Statement Number	Statement
259	77	The quantity of output of your work group is very high.
260	78	The quality of output of your work group is very high.
261	79	When high priority work arises, such as short suspenses, crash programs, and schedule changes, the people in my work group do an outstanding job in handling these situations.
264	80	Your work group always gets maximum output from available resources (e.g., personnel and material).
265	81	Your work group's performance in comparison to similar work groups is very high.

FACTOR - WORK INTERFERENCES (NOT A STATISTICAL FACTOR): Identifies things that impede an individual's job performance.

Variable Number	Statement Number	Statement
277	48	To what extent do you have the necessary supplies to accomplish your job?
278	49	To what extent do details (task not covered by primary or additional duty descriptions) interfere with the performance of your primary job?
279	50	To what extent does a bottleneck in your organization seriously affect the flow of work either to or from your group?

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FACTOR 822 - JOB RELATED SATISFACTION: Measures the degree to which the worker is generally satisfied with factors surrounding the job.

Variable Number	Statement Number	Statement
705	101	<u>Feeling of Helpfulness</u> The chance to help people and improve their welfare through the performance of my job. The importance of my job performance to the welfare of others.
709	102	<u>Co-worker Relationships</u> By amount of effort compared to the effort of my co-workers, the extent to which my co-workers share the load, and the spirit of teamwork which exists among my co-workers.
710	103	<u>Family Attitude Toward Job</u> The recognition and the pride my family has in the work I do.
717	106	<u>Work Schedule</u> By work schedule; flexibility and regularity of my work schedule; the number of hours I work per week.
718	107	<u>Job Security</u>
719	108	<u>Acquired Valuable Skills</u> The chance to acquire valuable skills in my job which prepare me for future opportunities
723	109	<u>My Job as a Whole</u>

FACTOR 823 - JOB RELATED TRAINING: Measures the extent to which one is satisfied with on-the-job and technical training received.

Variable Number	Statement Number	Statement
711	104	<u>On-the-Job Training (OJT)</u> The OJT instructional methods and instructors' competence.
712	105	<u>Technical Training (Other than OJT)</u> The technical training I have received to perform my current job.

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FACTOR 824 - GENERAL ORGANIZATIONAL CLIMATE: Measures the individual's perception of his or her organizational environment as a whole (i.e. spirit of teamwork, communications, organizational pride, etc.).

Variable Number	Statement Number	Statement
305	87	My organization is very interested in the attitudes of the group members toward their jobs.
306	88	My organization has a very strong interest in the welfare of its people.
307	89	I am very proud to work for this organization.
308	90	I feel responsible to my organization in accomplishing its mission.
310	92	Personnel in my unit are recognized for outstanding performance.
311	93	I am usually given the opportunity to show or demonstrate my work to others.
312	94	There is a high spirit of teamwork among my co-workers.
313	95	There is outstanding cooperation between work groups of my organization.
315	97	I feel motivated to contribute my best efforts to the mission of my organization.
316	98	My organization rewards individuals based on performance.

FACTOR 825 - MOTIVATION POTENTIAL SCORE: This factor is another variation of a scale employed by other job motivation theorists. The score ranges between 1 and 343 with 109 being the Air Force average. Low scores indicate a poorly motivating job. Score is computed using the following factors:

800	Skill variety
801	Task identity
802	Task significance
804	Job feedback
813	Task autonomy

Formula: $(800+801+802/3)+813+804$

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VARIABLES

Variable Number	Factor	Statement Number
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201	800/812	17	To what extent does your job require you to do many different things, using a variety of your talents and skills?
202	801/812	18	To what extent does your job involve doing a whole task or unit of work?
203	802/812	19	To what extent is your job significant, in that it affects others in some important way?
204 & 205	--	--	(Not used)
206	805	23	To what extent do additional duties interfere with the performance of your primary job?
207	805	24	To what extent do you have adequate tools and equipment to accomplish your job?
208	805	25	To what extent is the amount of work space provided adequate?
209	804/812	26	To what extent does your job provide the chance to know for yourself when you do a good job, and to be responsible for your own work?
210	802/812	27	To what extent does doing your job well affect a lot of people?
211	801/812	28	To what extent does your job provide you with a chance to finish completely the piece of work you have begun?
212	800/812	29	To what extent does your job require you to use a number of complex skills?

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Variable Number	Factor	Statement Number
-----------------	--------	------------------

213	813	30	To what extent does your job give you freedom to do your work as you see fit?
214	813	31	To what extent are you allowed to make the major decisions required to perform your job well?
215	811	32	To what extent are you proud of your job?
216*	--	33	To what extent do you feel accountable to your supervisor in accomplishing your job?
217	810	34	To what extent do you know exactly what is expected of you in performing your job?
218	810	35	To what extent are your job performance goals difficult to accomplish?
219 & 220	--	--	(Not used)
221	810	38	To what extent are your job performance goals realistic?
222-225	--	--	(Not used)
226	814	39	To what extent do you perform the same tasks repeatedly within a short period of time?
227	814	40	To what extent are you faced with the same type of problem on a weekly basis?

* This variable is an element of "job influences" (not a statistical factor).

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Variable Number	Factor	Statement Number
228-233	--	--
234	817	41
235-237	--	--
238*	--	42
239	817	43
240	817	44
241	817	45
242-248	--	--
249	806	51
250	806	52
251	806	53
252	806	54
253	806	55
254	--	--
255	816	56

Statement

(Not used)

To what extent are you aware of promotion/advancement opportunities that affect you?

(Not used)

To what extent do co-workers in your work group maintain high standards of performance?

To what extent do you have the opportunity to progress up your career ladder?

To what extent are you being prepared to accept increased responsibility?

To what extent do people who perform well receive recognition?

(Not used)

Opportunities to have independence in my work?

A job that is meaningful.

The opportunity for personal growth in my job.

Opportunities in my work to use my skills.

Opportunities to perform a variety of tasks.

(Not used)

A job in which tasks are repetitive.

* This variable is an element of "Job Influences" (not a statistical factor).

Variable Number	Factor	Statement Number
256 & 257	--	--
258	816	57
259	821	77
260	821	78
261	821	79
262 & 263	--	--
264	821	80
265	821	81
266-269	--	--
270	813	20
271	813	21
272	804/812	22

Statement

(Not used)

A job in which tasks are relatively easy to accomplish.

The quantity of output of your work group is very high.

The quality of output of your work group is very high.

When high priority work arises, such as short suspenses, crash programs, and schedule changes, the people in my work group do an outstanding job in handling these situations.

(Not used)

Your work group always gets maximum output from available resources (e.g., personnel and material).

Your work group's performance in comparison to similar work groups is very high.

(Not used)

To what extent does your job provide a great deal of freedom and independence in scheduling your work?

To what extent does your job provide a great deal of freedom and independence in selecting your own procedures to accomplish it?

To what extent are you able to determine how well you are doing your job without feedback from anyone else?

Appendix C

Variable
Number

Factor

Statement
Number

273 810 36

To what extent are your job performance goals clear?

274 810 37

To what extent are your job performance goals specific?

275 811 46

To what extent does your work give you a feeling of pride?

276 817 47

To what extent do you have the opportunity to learn skills which will improve your promotion potential?

277** -- 49

To what extent do you have the necessary supplies to accomplish your job?

278** -- 49

To what extent do details (task not covered by primary or additional duty descriptions) interfere with the performance of your primary job?

279** -- 50

To what extent does a bottleneck in your organization seriously affect the flow of work either to or from your group?

280-299 -- --

(Not used)

300 820 82

Ideas developed by my work group are readily accepted by management personnel above my supervisor.

301 820 83

My organization provides all the necessary information for me to do my job effectively.

302 820 84

My organization provides adequate information to my work group.

** These variables are elements of "work interferences" (not a statistical factor).

23

Variable
Number

Factor

Statement
Number

303 820 85

My work group is usually aware of important events and situations.

304 820 86

My complaints are aired satisfactorily.

305 824 87

My organization is very interested in the attitudes of the group members toward their jobs.

306 824 88

My organization has a very strong interest in the welfare of its people.

307 824 89

I am very proud to work for this organization.

308 824 90

I feel responsible to my organization in accomplishing its mission.

309 820 91

The information in my organization is widely shared so that those needing it have it available.

310 824 92

Personnel in my unit are recognized for outstanding performance.

311 824 93

I am usually given the opportunity to show or demonstrate my work to others.

312 824 94

There is a high spirit of teamwork among my co-workers.

313 824 95

There is outstanding cooperation between work groups of my organization.

24

Appendix C

Variable
Number

Factor

Statement
Number

314 820 96 My organization has clear-cut goals.
315 824 97 I feel motivated to contribute my best efforts to the mission of my organization.
316 824 98 My organization rewards individuals based on performance.
317 820 99 The goals of my organization are reasonable.
318 820 100 My organization provides accurate information to my work group.
319-403 -- -- (Not used)
404 818 58 My supervisor is a good planner.
405 818 59 My supervisor sets high performance standards.
406-409 -- -- (Not used)
410 818 60 My supervisor encourages teamwork.
411 818 61 My supervisor represents the group at all times.
412 818 62 My supervisor establishes good work procedures.
413 818 63 My supervisor has made his responsibilities clear to the group.
414 & 415 -- -- (Not used)
416 818 65 My supervisor performs well under pressure.
417-423 -- -- (Not used)
424*** -- 66 My supervisor takes time to help me when needed.
425 -- -- (Not used)

*** This variable is an element of "supervisory assistance" (not a statistical factor).

25

Variable
Number

Factor

Statement
Number

426 819 67 My supervisor asks members for their ideas on task improvements.
427 -- -- (Not used)
428 819 68 My supervisor explains how my job contributes to the overall mission.
429 & 430 -- -- (Not used)
431 819 69 My supervisor helps me set specific goals.
432 -- -- (Not used)
433 819 70 My supervisor lets me know when I am doing a good job.
434*** -- 71 My supervisor lets me know when I am doing a poor job.
435 819 72 My supervisor always helps me improve my performance.
436 819 73 My supervisor insures that I get job related training when needed.
437 819 74 My job performance has improved due to feedback received from my supervisor.
438 -- -- (Not used)
439*** -- 75 When I need technical advice, I usually go to my supervisor.
440 & 441 -- -- (Not used)
442 819 76 My supervisor frequently gives me feedback on how well I am doing my job.
443 & 444 -- -- (Not used)
445 818 64 My supervisor fully explains procedures to each group member.
446-704 -- -- (Not used)
*** These variables are elements of "supervisory assistance" (not a statistical factor).

26

Variable Number	Factor	Statement Number	Statement
705	822	101	Feeling of Helpfulness The chance to help people and improve their welfare through the performance of my job. The importance of my job performance to the welfare of others.
706-708	--	--	(Not used)
709	822	102	Co-worker Relationships My amount of effort compared to the effort of my co-workers, the extent to which my co-workers share the load, and the spirit of teamwork which exists among my co-workers.
710	822	103	Family Attitude Toward Job The recognition and the pride my family has in the work I do.
711	823	104	On-the-Job Training (OJT) The OJT instructional methods and instructors' competence.
712	823	105	Technical Training (Other than OJT) The technical training I have received to perform my current job.
713-716	--	--	(Not used)
717	822	106	Work Schedule My work schedule; flexibility and regularity of my work schedule; the number of hours I work per week.
718	822	107	Job Security
719	822	108	Acquired Valuable Skills The chance to acquire valuable skills in my job which prepare me for future opportunities.
720-722	--	--	(Not used)
723	822	109	My Job as a Whole
724-999	--	--	(Not used)

END
FILMED

5-86

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